

ABSTRACT OF THE DISCLOSURE

In some embodiments, alternate sources of aluminum or calcium are provided in various ways including the desired compounds. The further object of the present invention contemplate in situ creation of the compound in interest in fresh concrete and as a slurry which can be employed in remediation of existing concrete structures. A method of resisting corrosion in concrete containing metal elements is provided. It includes introducing into fresh concrete, containing metal elements, at least one compound capable of sequestering chloride ions. The method may also involve employing a compound which is capable of establishing a corrosion resistant oxide layer on the metal reinforcing elements. The invention also includes certain compounds which may be employed in the method as well as concrete structures containing the compounds. In another embodiment of the invention, concrete structures may be rehabilitated by providing an overlay containing a compound of the type which will contribute to corrosion resistance either through chloride ion sequestering or creating barriers around metal structural elements with the overlay being provided in situ or as a preformed member and with possible use of a slurry in combination with an overlay segment. In another embodiment, a source of alumina is combined in solution with $\text{Ca}(\text{NO}_2)_2$ and/or NaNO_2 with the resultant solution being introduced into the pores of a concrete structure, preferably under pressure to cause them to react with each other and with $\text{Ca}(\text{OH})_2$ contained within the concrete to produce the desired corrosion inhibiting compound.